

09/820,200

FILE 'CAPLUS' ENTERED AT 20:47:38 ON 26 FEB 2003

L1 0 S GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?) AN
L2 3 S GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?)
L3 1 S GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?) AN

=> d l3 abs ibib kwic 1

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS

AB The present invention relates to a progress for the isolation of a
glycolipid enriched fraction from **rice bran**
oil by subjecting crude **rice bran oil**
to at least two steps of **dewaxing/degumming**, treating
sludge obtained as a byproduct of the second **dewaxing/**
degumming to **hexane** extn., and sepg. the
glycolipid fraction. The glyolipid fraction so obtained can be
further purified.

ACCESSION NUMBER: 2002:755248 CAPLUS

DOCUMENT NUMBER: 137:281022

TITLE: Process for the isolation of **glycolipids**

INVENTOR(S): Vali, Shaik Ramjan; Chakrabarti, Pradosh Prasad;
Thengumpillil, Narayana Balagopala Kaimal

PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India

SOURCE: U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002143173	A1	20021003	US 2001-820200	20010328
PRIORITY APPLN. INFO.:			US 2001-820200	20010328

TI Process for the isolation of **glycolipids**

AB The present invention relates to a progress for the isolation of a
glycolipid enriched fraction from **rice bran**
oil by subjecting crude **rice bran oil**
to at least two steps of **dewaxing/degumming**, treating
sludge obtained as a byproduct of the second **dewaxing/**
degumming to **hexane** extn., and sepg. the
glycolipid fraction. The glyolipid fraction so obtained can be
further purified.

ST **glycolipid isolation rice bran oil**
degumming dewaxing hexane extn

IT **Extraction**
(process for the isolation of **glycolipids**)

IT **Glycolipids**
RL: PUR (Purification or recovery); PREP (Preparation)
(process for the isolation of **glycolipids**)

IT Fats and Glyceridic oils, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(rice bran; process for the isolation of **glycolipids**)

IT 110-54-3, **Hexane**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(extn. agent; process for the isolation of **glycolipids**)

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FILE COVERS 1907 - 26 Feb 2003 VOL 138 ISS 9
FILE LAST UPDATED: 25 Feb 2003 (20030225/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s glycolipid? and rice(2a)bran(2a)oil? and (degum? or dewax?) and hexane(p) extract?

(2A)OIL? IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter "HELP COMMANDS" at an arrow prompt (=>).

=> s glycolipid? and rice(2a)bran(2a)oil and (degum? or dewax?) and hexane(p) extract?

14111 GLYCOLIPID?
69980 RICE
13849 BRAN
644372 OIL
1169 RICE(2A)BRAN(2A)OIL
1900 DEGUM?
5261 DEWAX?
93087 HEXANE
234575 EXTRACT?
1804 HEXANE(P) EXTRACT?

L1 0 GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?) AND
HEXANE(P) EXTRACT?

=> s glycolipid? and rice(2a)bran(2a)oil and (degum? or dewax?)

14111 GLYCOLIPID?
69980 RICE
13849 BRAN
644372 OIL
1169 RICE(2A)BRAN(2A)OIL
1900 DEGUM?
5261 DEWAX?

L2 3 GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?)

=> d l2 abs ibib kwic 1-3

L2 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS

AB To remove phospho **glycolipids**, which is the resource of residual phosphorus in rice barn oils, the crude rice barn oil is treated with < 5% boiling water at room temp. to obtain purified oil after the sludge is sepd., followed by treating the purified oil with 0.5 - 10 % of reagent selected from mono-, di-, or triethanolamine to prep. refine rice oil with low phosphorus content (< 10 ppm); 10 % excessive reagent is used to neutralize the free fatty acid in the purified oil, followed by treating with 5 % boiling water again to obtain refining oil with < 0.5% free fatty acid, which is then bleached and deodorization to have rice oil with < 10 ppm phosphorus and well retained micro-nutrients. Thus, crude rice barn oil (P: 358 ppm. free fatty acid: 7.98 %) was treated with 5 vol% boiling water and centrifuged to obtain clear oil, which was then treated with 3 % monoethanolamine and 5 vol % boiling water consequently to obtain the refining rice oil with Phosphorus content of 10.9 ppm and acid value of 0.9.

ACCESSION NUMBER: 2002:808072 CAPLUS

DOCUMENT NUMBER: 137:312690

TITLE: Preparation of low-phosphorus **rice bran oil** using **degumming** method

INVENTOR(S): Thengumpillil, Narayana Balagopala Kaimal; Ongole, Rajamma; Potzla, Buhaska Sasha

PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002309282	A2	20021023	JP 2001-101957	20010330
US 2002172741	A1	20021121	US 2001-820201	20010328
PRIORITY APPLN. INFO.:			JP 2001-101957 A	20010330

TI Preparation of low-phosphorus **rice bran oil** using **degumming** method

AB To remove phospho **glycolipids**, which is the resource of residual phosphorus in rice barn oils, the crude rice barn oil is treated with < 5% boiling water at room temp. to obtain purified oil after the sludge is sepd., followed by treating the purified oil with 0.5 - 10 % of reagent selected from mono-, di-, or triethanolamine to prep. refine rice oil with low phosphorus content (< 10 ppm); 10 % excessive reagent is used to neutralize the free fatty acid in the purified oil, followed by treating with 5 % boiling water again to obtain refining oil with < 0.5% free fatty acid, which is then bleached and deodorization to have rice oil with < 10 ppm phosphorus and well retained micro-nutrients. Thus, crude rice barn oil (P: 358 ppm. free fatty acid: 7.98 %) was treated with 5 vol% boiling water and centrifuged to obtain clear oil, which was then treated with 3 % monoethanolamine and 5 vol % boiling water consequently to obtain the refining rice oil with Phosphorus content of 10.9 ppm and acid value of 0.9.

ST low phosphorus contained rice oil **degumming** boiling water ethanolamine

IT Gums and Mucilages

(prepn. of low-P rice barn oil by **degumming** method with amines and boiling water)

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IT Fats and Glyceridic oils, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(rice bran; prepn. of low-P rice barn oil by **degumming** method
with amines and boiling water)

IT 102-71-6, Triethanolamine, uses 111-42-2, Diethanolamine, uses
141-43-5, Monoethanolamine, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(prepn. of low-P rice barn oil by **degumming** method with
amines and boiling water)

L2 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS

AB The present invention relates to a progress for the isolation of a
glycolipid enriched fraction from **rice bran**
oil by subjecting crude **rice bran oil**
to at least two steps of **dewaxing/degumming**, treating
sludge obtained as a byproduct of the second **dewaxing/**
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PRIORITY APPLN. INFO.: US 2001-820200 20010328

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fraction. The glyolipid fraction so obtained can be further purified.

ST **glycolipid** isolation **rice bran oil**
degumming dewaxing hexane extn

IT Extraction
(process for the isolation of **glycolipids**)

IT **Glycolipids**
RL: PUR (Purification or recovery); PREP (Preparation)
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RL: PEP (Physical, engineering or chemical process); PYP (Physical
process); PROC (Process)
(rice bran; process for the isolation of **glycolipids**)

IT 110-54-3, Hexane, uses
RL: NUU (Other use, unclassified); USES (Uses)
(extn. agent; process for the isolation of **glycolipids**)

L2 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS

AB **Rice bran oil**, not being a seed-derived oil, has a compn. qual. different from common vegetable oils and the conventional vegetable oil processing technologies are not adaptable without incurring huge losses. The oil's unusual high content of waxes, free fatty acids, unsaponifiable constituents, phospholipids, **glycolipids** and its dark color all cause difficulties in the refining process. An attempt was made in this investigation to look into factors that are responsible for such difficulties and to develop suitable methodologies for phys. refining of **rice bran oil**. Special attention was given to **dewaxing**, **degumming** and deacidification steps. The high content of **glycolipids** (.apprx.6%) present in the oil was found to be a central problem and their removal appeared crucial for successful processing of the oil. We have also isolated and identified, for the first time, phosphorus-contg. **glycolipids** that are unique to this oil. These compds. prevent a successful **degumming** of the oil and their high surface activity leads to unusually high refining losses during alkali refining. A no. of simple processes has been evolved, including 1) a simultaneous **dewaxing** and **degumming** process, 2) an unusual enzymic process to **degum** the oil, 3) processes for the removal of the **glycolipids** including the phosphoglycolipids and 4) a process for the isolation of the **glycolipids** which may have potential applications in the food, cosmetic and pharmaceutical industries. The processing protocol suggested here becomes the first and only one to produce an oil with less than 5 ppm of phosphorus from crude **rice bran oil**, rendering it thus suitable for phys. refining. We believe that the present results are very significant and should contribute to a better utilization of this valuable oil.

ACCESSION NUMBER: 2002:331297 CAPLUS

DOCUMENT NUMBER: 137:92965

TITLE: Origin of problems encountered in **rice bran oil** processing

AUTHOR(S): Narayana, Thengumpillil; Kaimal, Balagopala; Vali, Shaik Ramjan; Surya, Bhamidipati Venkata; Rao, Koppeswara; Chakrabarti, Pradosh Prasad; Vijayalakshmi, Penumarthi; Kale, Vijay; Narayana, Karna; Rani, Prasanna; Rajamma, Ongole; Bhaskar, Potula Satya; Rao, Turaga Chandrasekhara

CORPORATE SOURCE: Lipid Science & Technology Division, Indian Institute of Chemical Technology, Hyderabad, 500 007, India

SOURCE: European Journal of Lipid Science and Technology (2002), 104(4), 203-211

CODEN: EJLTFM; ISSN: 1438-7697

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI Origin of problems encountered in **rice bran oil** processing

AB **Rice bran oil**, not being a seed-derived oil, has a compn. qual. different from common vegetable oils and the conventional vegetable oil processing technologies are not adaptable without incurring huge losses. The oil's unusual high content of waxes, free fatty acids, unsaponifiable constituents, phospholipids, **glycolipids** and its dark color all cause difficulties in the

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- ST **rice bran oil refining glycolipid**
phospholipid removal
- IT Food processing
Food viscosity
Surfactants
(origin of problems encountered in **rice bran oil processing**)
- IT **Glycolipids**
RL: ADV (Adverse effect, including toxicity); BSU (Biological study, unclassified); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(origin of problems encountered in **rice bran oil processing**)
- IT Fatty acids, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(origin of problems encountered in **rice bran oil processing**)
- IT Carboxylic acids, biological studies
Phospholipids, biological studies
Waxes
RL: BSU (Biological study, unclassified); REM (Removal or disposal); BIOL (Biological study); PROC (Process)
(origin of problems encountered in **rice bran oil processing**)
- IT Fats and Glyceridic oils, biological studies
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical process); PYP (Physical process); BIOL (Biological study); PROC (Process); USES (Uses)
(rice bran; origin of problems encountered in **rice bran oil processing**)
- IT 135371-38-9, Lipase G
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(origin of problems encountered in **rice bran oil processing**)
- IT 77-92-9, Citric acid, biological studies 87-69-4, Tartaric acid,

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biological studies 102-71-6, Triethanolamine, biological studies
108-24-7, Acetic anhydride 111-42-2, Diethanolamine, biological studies
141-43-5, Ethanolamine, biological studies 144-62-7, Oxalic acid,
biological studies 7664-38-2, Phosphoric acid, biological studies
RL: FFD (Food or feed use); PEP (Physical, engineering or chemical
process); PYP (Physical process); BIOL (Biological study); PROC (Process);
USES (Uses)
(origin of problems encountered in **rice bran**
oil processing)

=> d his

(FILE 'HOME' ENTERED AT 20:47:33 ON 26 FEB 2003)

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L1 0 S GLYCOLIPID? AND RICE(2A)BRAN(2A)OIL AND (DEGUM? OR DEWAX?) AN
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